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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Rec'd PCT/PTO 14 APR 2005

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Applicant's or agent's file reference RL.P52356WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA416)	
International application No. PCT/GB 03/04484	International filing date (day/month/year) 17.10.2003	Priority date (day/month/year) 17.10.2002
International Patent Classification (IPC) or both national classification and IPC H04B1/30		
Applicant TOUMAZ TECHNOLOGY LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
 - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13.05.2004	Date of completion of this report 28.12.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer Douglas, I Telephone No. +49 30 25901-470 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04484**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-15 as originally filed

Claims, Numbers

5 (part), 6-22 as originally filed

1-4, 5 (part), 23-26 received on 17.11.2004 with letter of 15.11.2004

Drawings, Sheets

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-5,7-17,19-21,23,25,26
	No: Claims	1,6,18,22,24
Inventive step (IS)	Yes: Claims	
	No: Claims	1-26
Industrial applicability (IA)	Yes: Claims	1-26
	No: Claims	

2. Citations and explanations

see separate sheet

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Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document:

D1: BRUECKMANN D: "REKONFIGUIERBARE HF-TEILE, DIE LOESUNG FUER MOBILFUNKGERAETE DER ZUKUNFT?" ITG FACHBERICHTE, VDE VERLAG, BERLIN, DE, no. 160, 10 May 2000 (2000-05-10), pages 83-94, XP001052678 ISSN: 0932-6022

2. The application does not meet the requirements of Article 6 PCT, because claims 1, 24, 26 are not clear.

2.1 Claims 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim gives no information as to the basis on which the selection is made, but rather attempts to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

2.2 The same objection applies to independent claims 24 and 26.

2.3 In claim 1 the wording "...being configurable to down-convert a wanted component of the amplified input signal to one of at least two intermediate frequency bands..." does not make clear that the electric circuit is capable of converting down to either of the frequency bands. It simply states that it is capable of converting down to one of these bands.

3. The subject matter of claims 1, 6, 18, 22 and 24 of the present application is not new in the sense of Article 33(2) PCT.

3.1 Document D1 deals with reconfigurable cellular mobile radios capable of supporting several different standards (see page 83, first and last paragraphs). In section 2 existing architectures are dealt with. In section 3 the software radio is

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introduced as a possible future reconfigurable cellular mobile radio. In section 4 a homodyne receiver front end is introduced as a possible RF front end for the software radio. The anti-aliasing filter between the mixer and the ADC is tunable to enable it to accommodate the different IF bandwidths etc. of the different standards which the software radio must support (see page 87, para 4). The frequency mixer is configured to always select an appropriate intermediate frequency band (i.e. zero IF) regardless of what standard, and therefore what input frequency, is currently being supported by the software radio.

The document D1 (**Diagram 4.1**) discloses (the references in parentheses applying to this document):

An electric circuit for use as a radio receiver or as part of a radio receiver, the electric circuit comprising:
amplification means for receiving an analogue input signal;
analogue frequency mixer means for receiving an output of the amplification means, the mixer means being configurable to down-convert a wanted component of the amplified input signal to one of at least two intermediate frequency bands (**implicit**);
analogue filter means for receiving an output of the frequency mixer means, the filter means being switchable between at least two filter configurations (**page 87, para 4**);
and control means coupled to the frequency mixer means and to the filter means for selecting an intermediate frequency band and filter configuration appropriate to the input signal (**implicit**).

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

3.2 The document D1 (**Diagram 4.1**) discloses (the references in parentheses applying to this document):

An electric circuit for use as a radio receiver or as part of a radio receiver, the electric circuit comprising:
amplification means for receiving an analogue input signal;
analogue frequency mixer means for receiving an output of the amplification means, the mixer means comprising a plurality of mixers which can be configured to provide mixer operation in a plurality of modes at least one of the mixers being reused in different operating modes (**implicit**);

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analogue filter means for receiving an output of the frequency mixer means, the filter means being switchable between at least two filter configurations (page 87, para 4);

and control means coupled to the frequency mixer means and to the filter means for selecting an intermediate frequency band and filter configuration appropriate to the input signal (implicit).

The subject-matter of claim 24 is therefore not new (Article 33(2) PCT).

3.3 The additional features of claims 6, 18, 22 are also known from D1. Therefore these claims do not meet the requirements of Articles 33(2) PCT with respect to novelty.

4. The present application does not meet the requirements of Article 33(3) PCT, because the subject matter of claims 2 to 5, 7 to 17, 19 to 21, 23, 25, 26 does not involve an inventive step.

4.1 Document D1, which is considered to represent the most relevant state of the art, discloses the advantages and disadvantages of zero-IF, low-IF and heterodyne architectures. It would be clear to the man skilled in the art that he had the option of dynamically selecting the architecture most appropriate to the input signal.

Therefore the subject matter of claim 26 is obvious and cannot be regarded as inventive.

4.2 The present application does not meet the requirements of Article 33(3) PCT, because the subject matter of dependent claims 2 to 5, 7 to 17, 19 to 21, 23, 25 does not involve an inventive step. This is due to the fact that these claims concern features known to the person skilled in the art, such that no inventive merit can be attributed thereto.

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